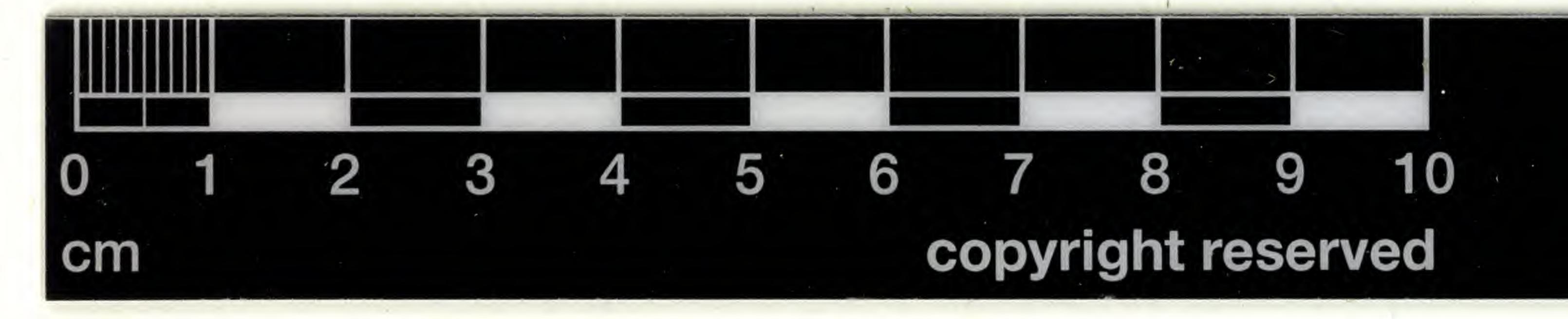
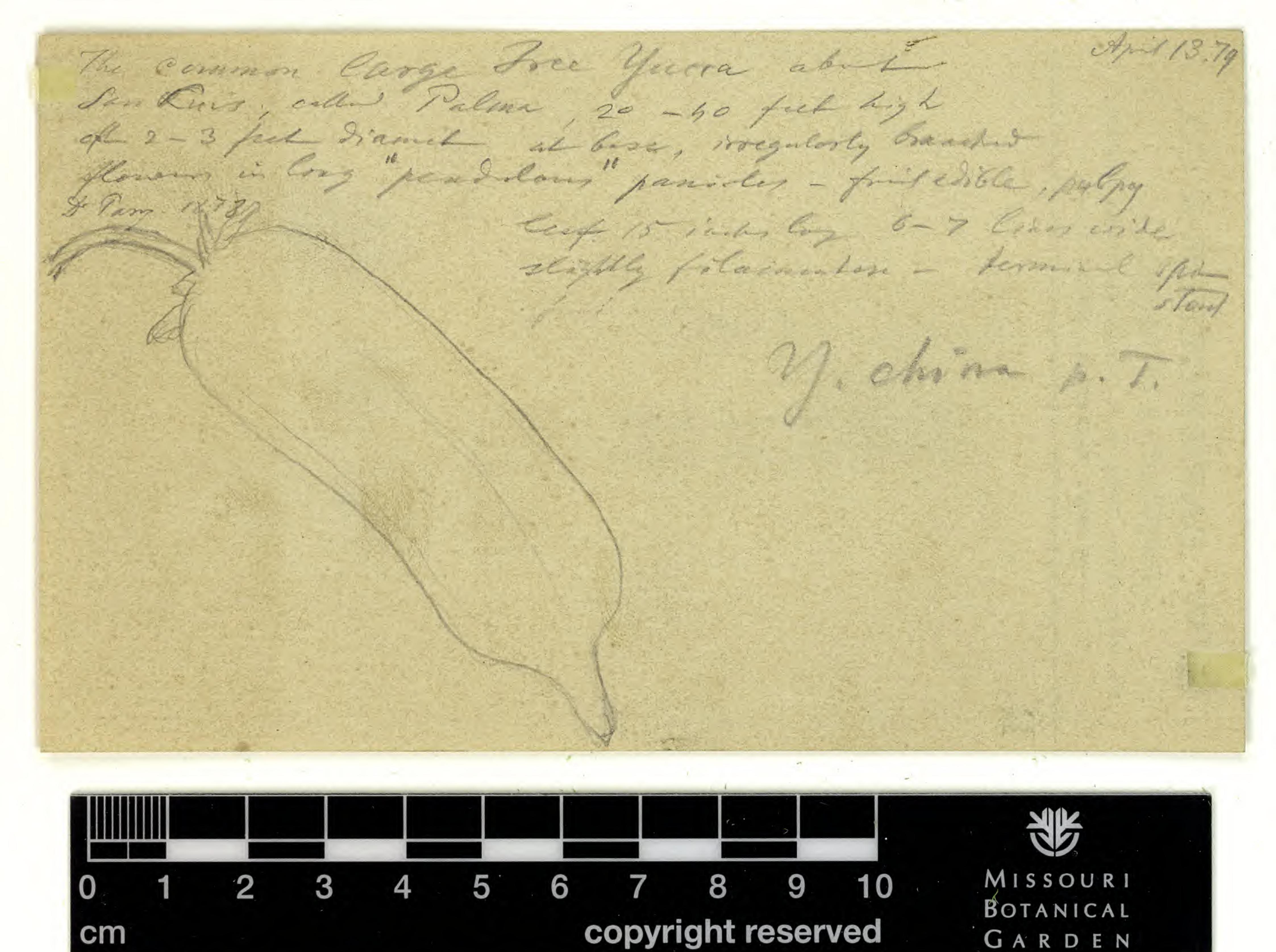


206 41 491 A plain covered with further in flower presents a beautiful appearance of pyram i del spike, sevenl fach en leight plants 25-30 feet high, 2-3 feet dans after with won a dryan branches -The fibres of the leaves are used for Cordine the Trucks as palings on splik ents dabs The colobe fruit is celled, latinos The apper soft part (heart) of the steen is "quiote" and is vousted The flowers cooker MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS 



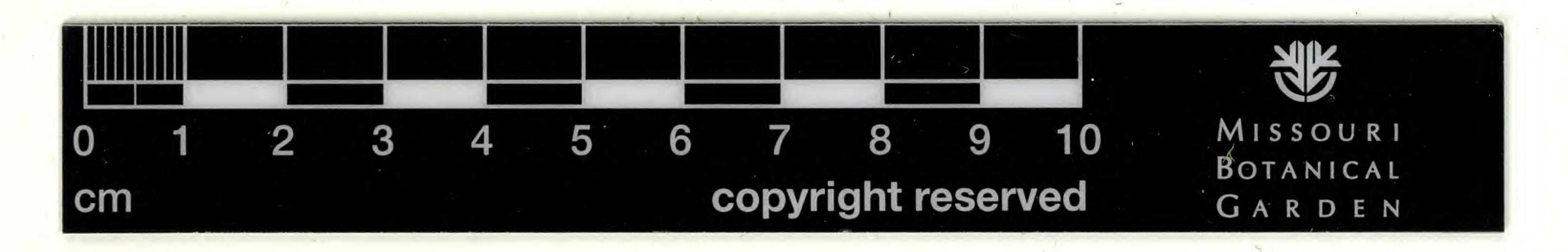


BOTANICAL GARDEN





Jurca China a much branched true, 2 6 feet Nameter orf long, source of the wide, with very slender fibres, and a fermint spine about flat on the upper surface. Panile (fe. fibre Manh) erect, with numer, white that inds long; printing paroiste nodding; fruit barrate pointed, or slightly rottete, album led their album L'ommon at San Swin Osteri 20 40, monty 30 feet high ale all over the Libbela Sof Mupico (five Parry) till replaced worth want by y burrata, frais alle Datile If. end of Fibr



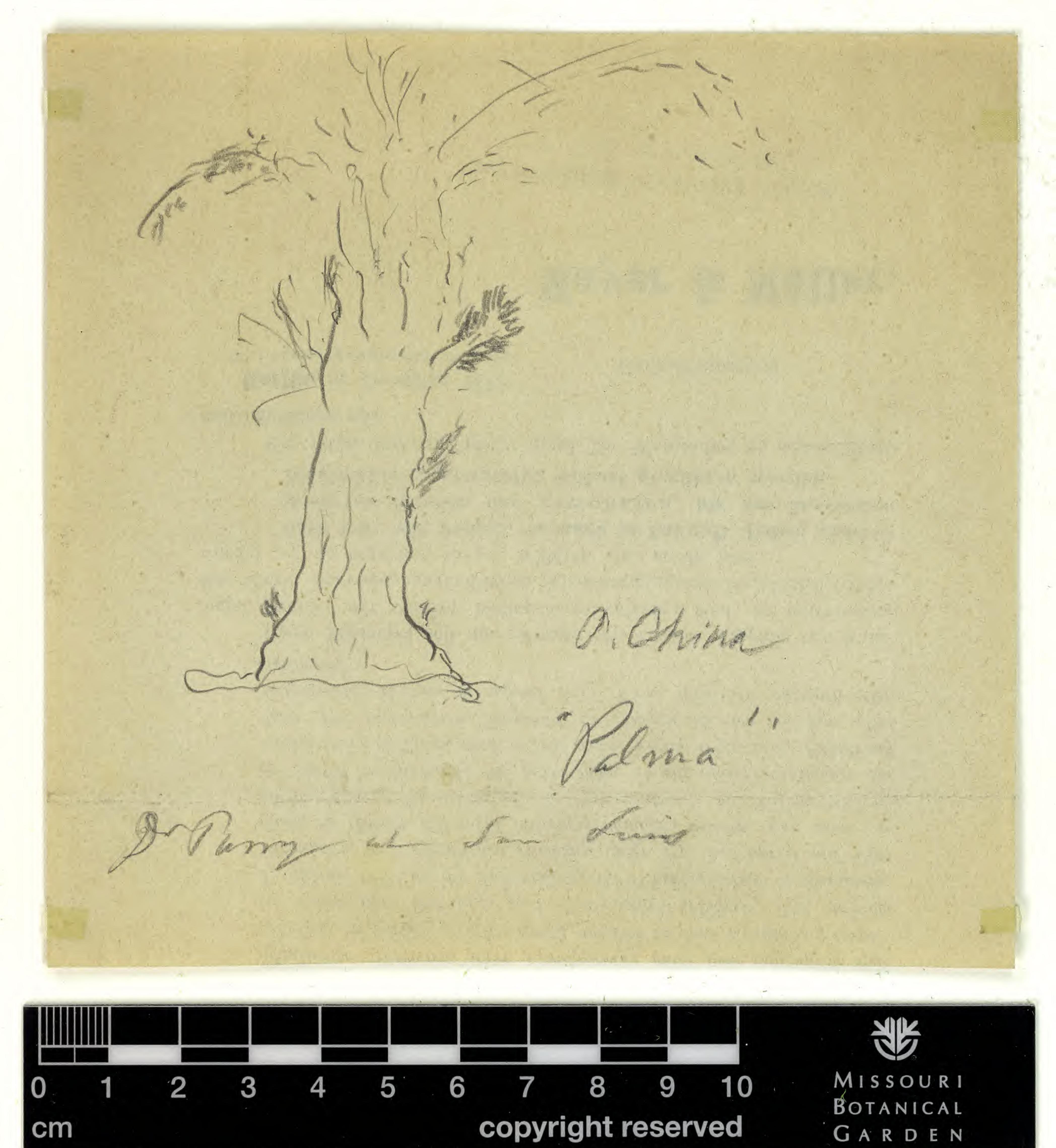
scales in 13 order the Sant 8 spirals most from conspiruous; larger states 2 inches long and 7 lines wide, stinen type MANN PAPERS

Pinus Elliöllis ingelm. n. sp.

A large tree, 70-100 feet high party to 110

A large tree, 70-130 feet high 2-4 feet in M'SSJUAL LUTTINICAL GARDEN GEORGE ENGELMANN PAPERS with their (7-14 lines thick) lawin aled, grayish brown back ? deaves in two and threes, in the axils of laurcolate, long proper, somewhat persistent bracks, I to 12, mostly about 9, inches long, 3/4 to nearly I live wide, and rigid, closely semulate arutish, sheaths at first about 3/4 inch long, later withing to one half that length, resinducts internal fassivent to the sheet of the vase ular bundles), thate flowers from the axil of Irmilar, persistent bruits oglindrical clongate I (1/2 to 2 inches long) in a chost head (not more than I inch long), each surrounded by an involunce. 4 lines in length, of about 12 boards, The extenior pair strongly Ralet half the length of the inner ones, anthors with Jein's cercular denticulate, rose-puple crests; pollen grains 0.03/ to 0.045 lines, on an average 0.04 lines in the longest d'ameter, semale ament, pedun ded, mostly 2 to 4, or rank,





MISSOURI

BOTANICAL

GARDEN

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robo nogistan Asilta dien Weise districh an nosista notatos gett tedise mhi nou neb elv nerebno uz tenudiez nenedegegeno meb hep gany dathed autheden wird, welche seinen Verlag trotz dieser Erklärung -un uəbunıpuvH uəllv tim — ıvvq uəbəb siv bunuyəəH ui lhowos gandandreut, dass Jeder der Unterzeichneten die Geschäftsverbindung -uz rowz bau merden merhindern merden, na delani saut zwar in aslla tim visrqusbad msb rstau nspisank nshitastio bau nsralusrid 1. Januar 1880 an die Ankündigung ihrer Verlagsartikel in Katalogen, mov sie wollen aber hierdurch noch ausdrücklich erklären, dass sie vom Edhande senatanet rent derselbe zu ihrer kenntanes gelangte; state standuament man name as nachmia a name suater suateres way you fo

werden wir zu degegegnen wissen, erklären ader schon jetzt Der hierin liegenden empfindlichen Schädigung unseres Geschäftsbetriebes logen, welche mit unseren Nettopreisen versehen sind, zu unterlassen. Diese Massregel soll uns zwingen, die fernere Ausgabe von Kata-", wataigsnn

dass wir, wie disher, so auch in Zukunkt Jedem unserer

Möglichkeit gesteigerten Rabatt gewähren werden. geehrten Kunden den gewohnten, dis zur äussersten

Wir ditten Sie, uns kerner durch ihr Wohlwollen zu unterstützen

sun uəlyətdmə pun

Hochachtungsvoll

W., Französische-Str. 38-39. Berlin, im December 1879.

Maller & Maller.

SSTURI BOTANICAL GAR -N GEORGE ENGELMANN PAPERS

OFFICE OF

## MISSOURI STATE MUTUAL Tire and Marine Statement Ce.

OF ST. LOUIS,

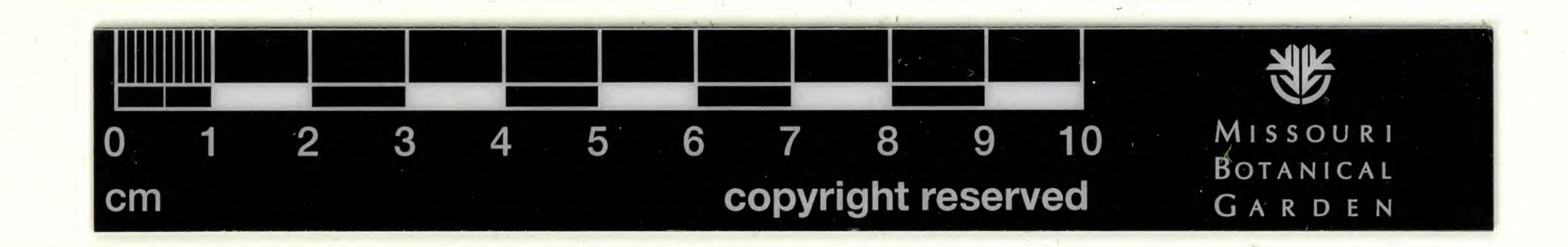
ROOMS 126 AND 128, CHAMBER OF COMMERCE BUILDING,

St. Louis & Cov. 2/d 1881.
Dr. Hev. Ennelmann

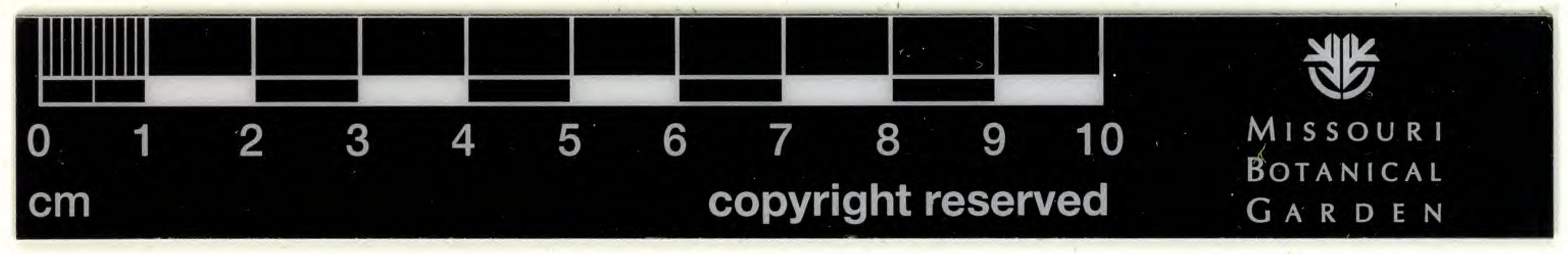


Muna Jilifera Rev. Hostic Ort 1" 1886 H. afritz sper.

M'er POTANICAL GARDEN GERGE ENGELMANN PAPERS




Yworn filifen voane fibres, name leaves Muse Her Her Sund is Justing the Gilo wenters Yucan canaliculate Trunk 2/2- I the high, 10-12 out Jucan canaliculate Trunk 2/2- I the high, long pointed Quameter (in survalue house) leaves stiff, long pointed with fee long fibrous of same as in Player Il numer prior neples! / auste speria with that name has und let brown leaves, ad is slylly fibrous only - with the Smithty very Different.



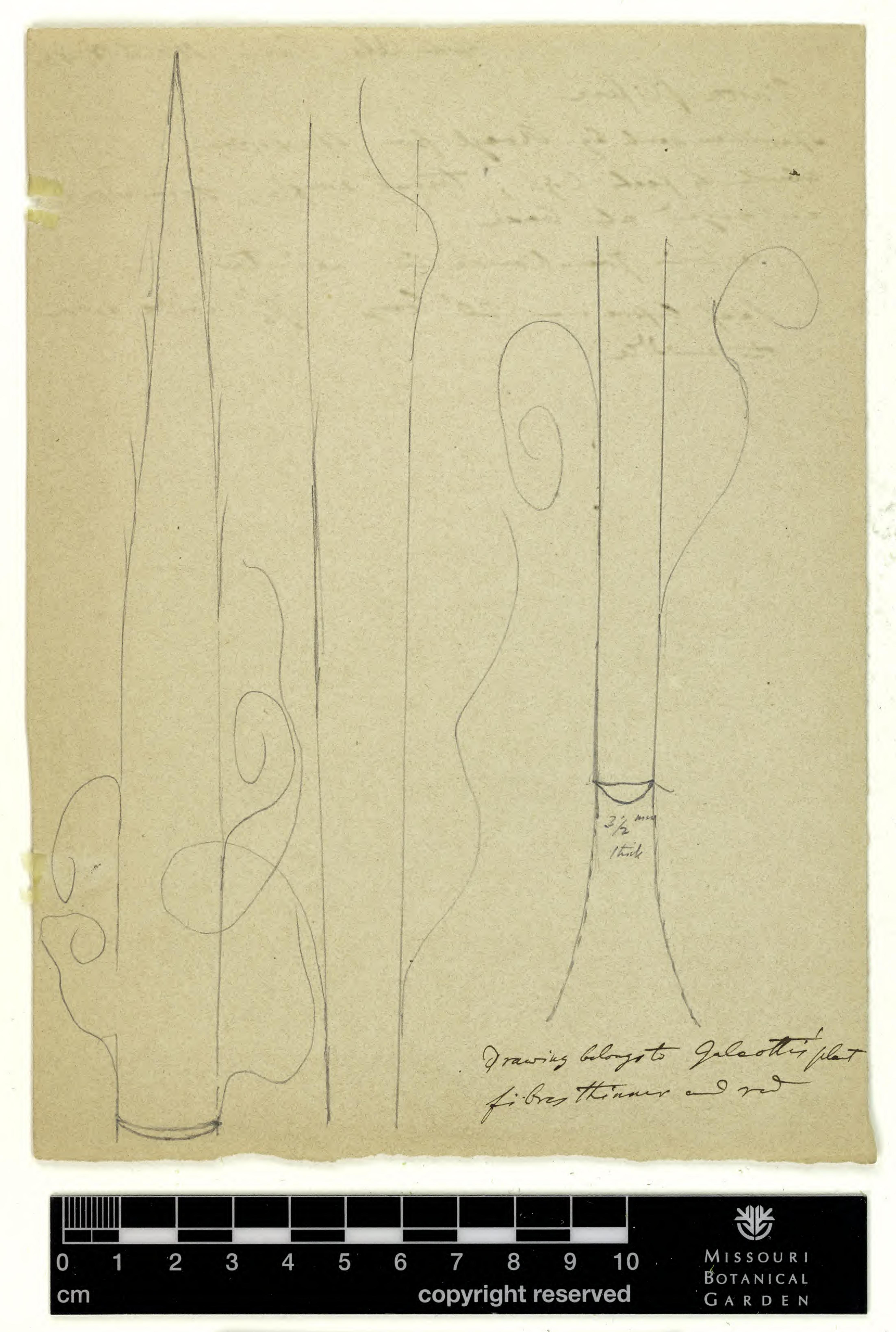


Host Thurst, Antibes 25 Fbr 1869 Jura filifera The same elegant plant I had seen in the Pringer. The Constito ground . The Capito ground (Ann Cell ) at Rome. Has not get flowered. Four feet high, trouk naket below, very leafy above deaves remarkably slift, 18-24 inches long 1-1/2 inch wride romane above, convox below aprovants 3, lealow, at the thicket part some than 5 min thich; for 1 for 1/2 - 1 inch Cong whitich or rather ash, wilt Bown marying between this in the green part, tente spinon pout 6-7. mon long very stiff. Leaves green both sides, with few their flexuous and pendolons, long fibres on margin Lowest par part of leaf not much namons nor base much condenced , bet namone, part flet above, not concave, or even some That convex str - 6 min Thich. 

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Husta plifera

Sperimen sent by Roegh from Mexitor

Sperimen sent by Roegh from Mexitor

about 4 feet high, trunk single, somewhat
colorged at base

Kept in Greenhouse in winter

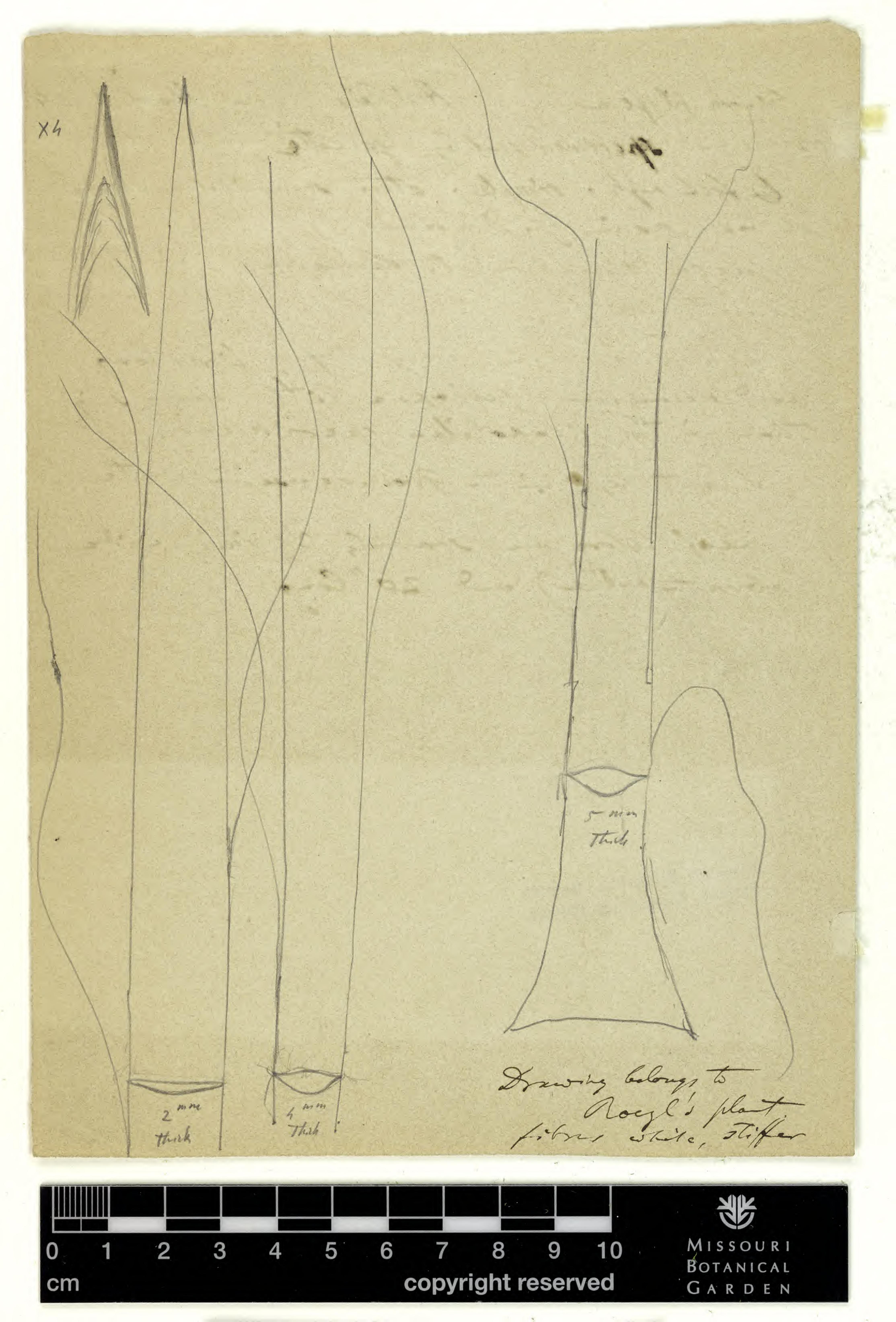
Leef before me 20" long "7" with above

the midte

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS







gerra filipen Host Cels, Paris Harts 18 1869 original sperimen sent by galesto, be feel high; simple stem somewhat enlarged at base, as in y. Dinorning.

Que ra canalisate Later Lemaine, is the same thing.

Leaves na iron, very stiff fibres long and necessary, perhaps a little more stiff than in the Acapolitan sperimeny.

Mant kept in the Green house in writer

Leaf before we snamely 3/4 inch will above the holle) and 20" long

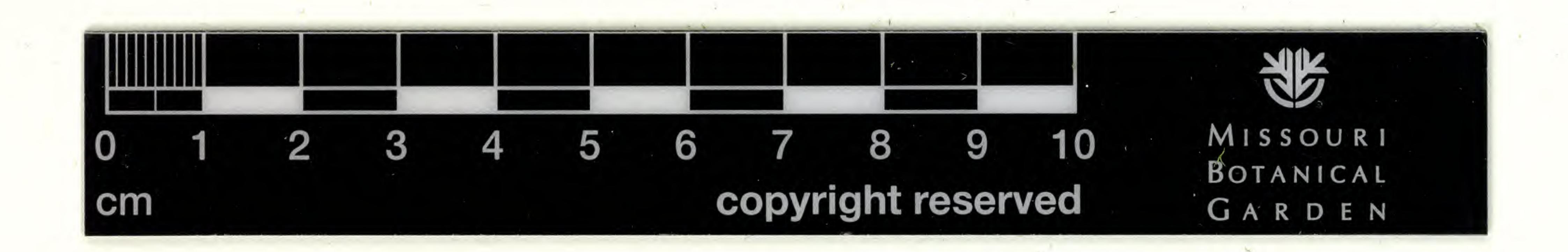
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

8540

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Megra cambilett." in Hort Juedeney
has a truck (a incher bigh. leaver very nama
(5-6" with) stiff very filamentone, and resemble;
much years augustifilia



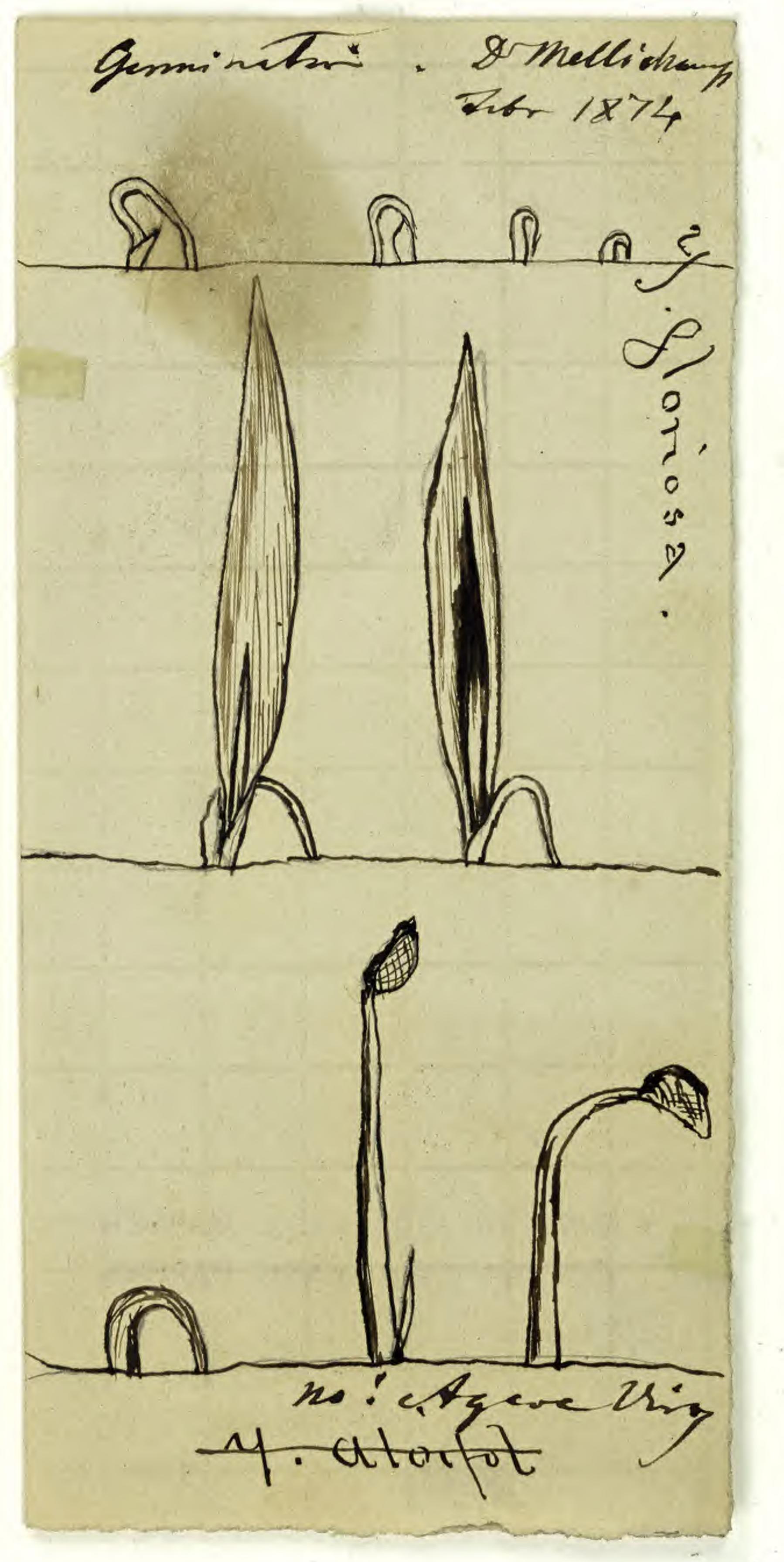


Yurra canalirelata

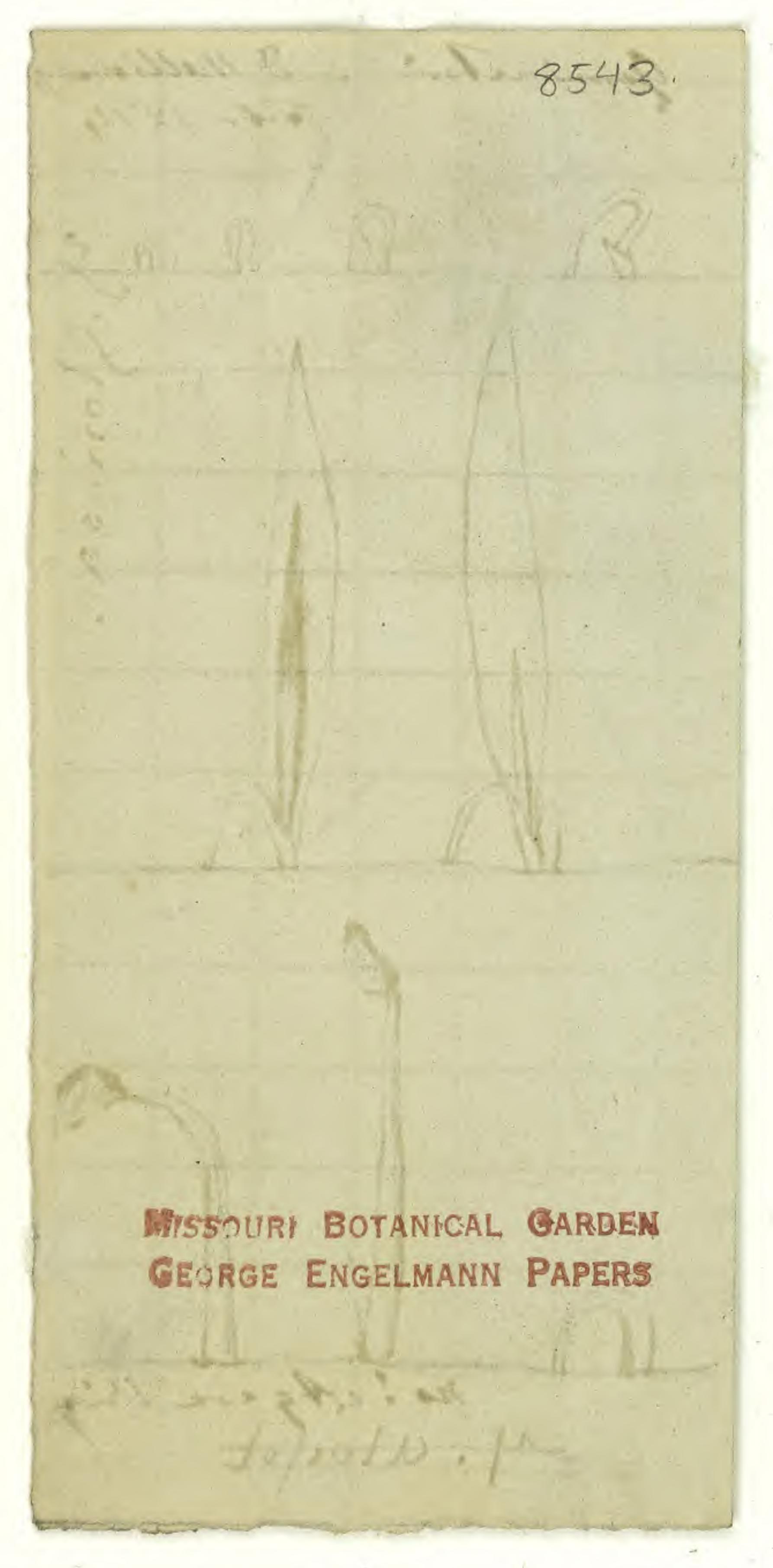
ii Hos. Neapol. Jan 7 1869. a smile sperie ei a pot - but air the Stagge del Municipio (opposite No Jothonia alla Ulla d' Firenze) a fike sperimen groved in open ground, Cambernet, 3 feel high, hibit of y alvefoler, with stiff spirose leaves in margin fen stiff and long fibres\_ so that I at first thought of my Yura manifila ( Malcatu Torr) but the fibres are mon stender, not twisted and lang like long pierry of stif theread about the plant? It mag still be the Jame Thing.

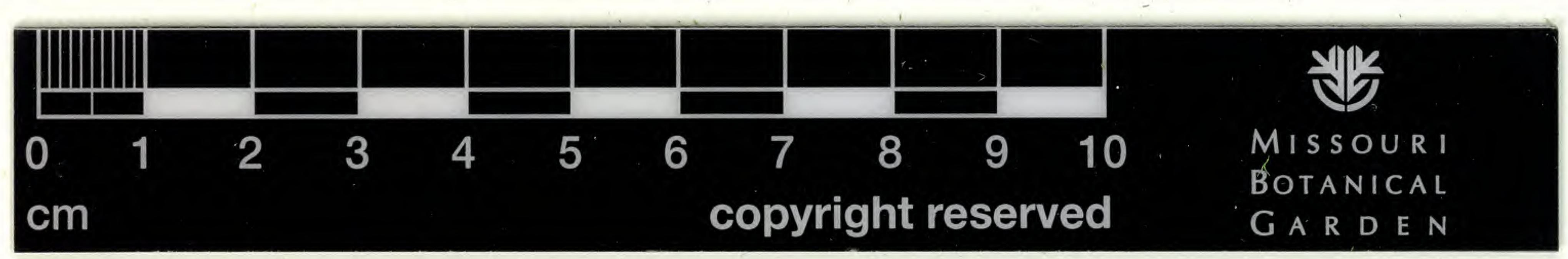












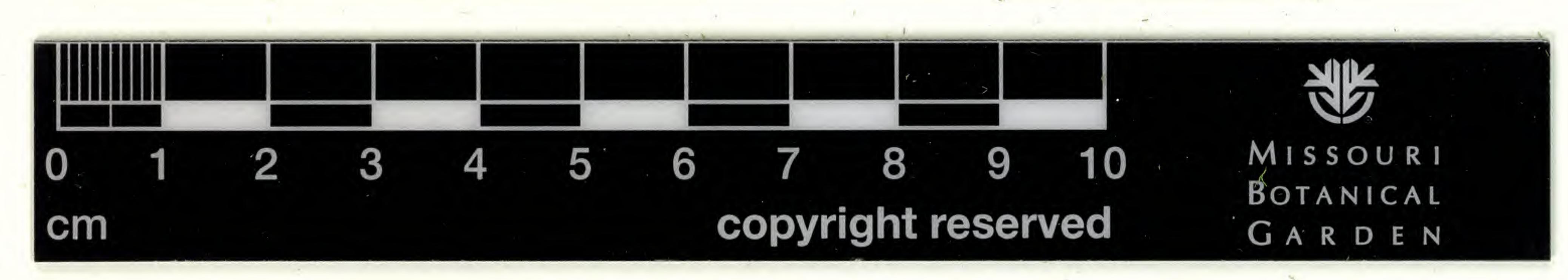
Ir Engelmann says That out our recession he managed to get a destruct view of The tube of the pollen of a Jucea actually proving down into the ovules, He neplected to save the spine but much a seetch. He never sand this buil once of There only by accident. nor2/17

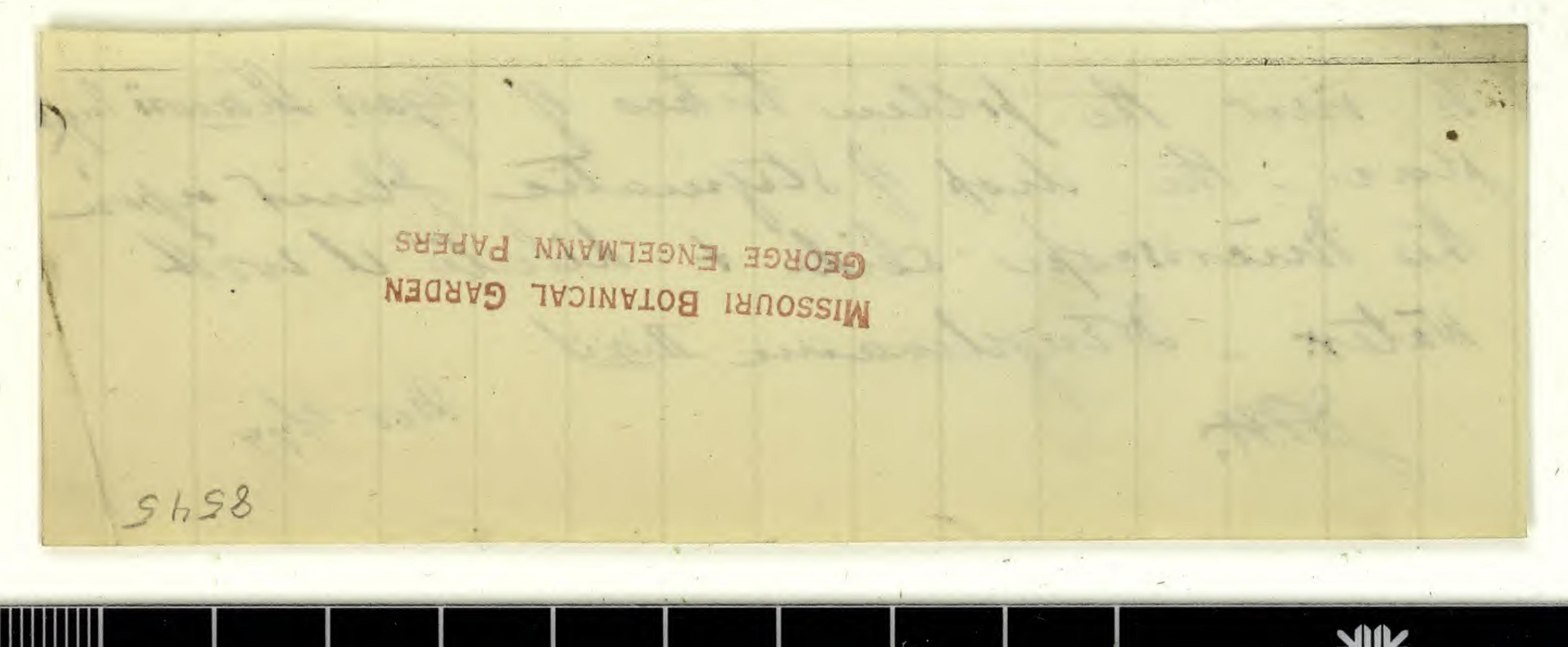






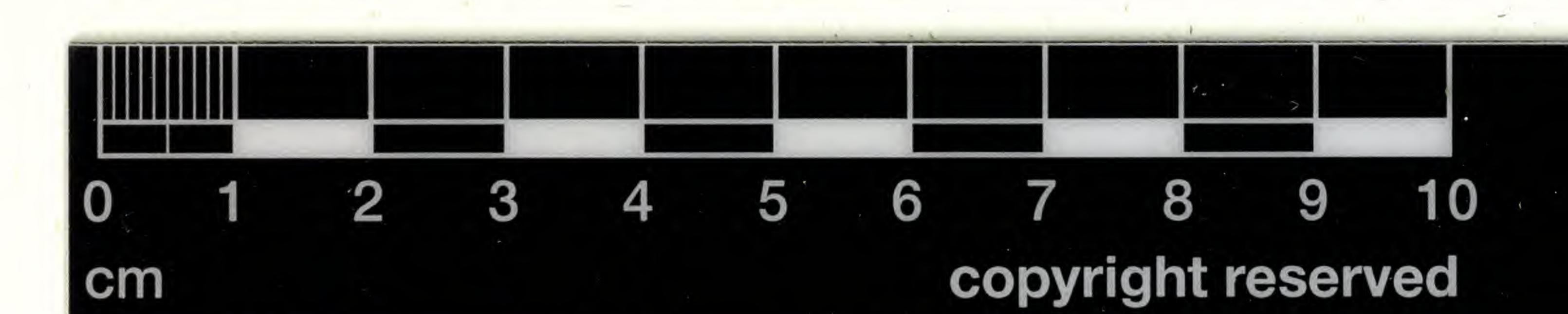
To view the follow tuties of again Shawii Englis the knowscope slide & dilute it with Water. - D'Engelmanne Tixi Moor 2/2



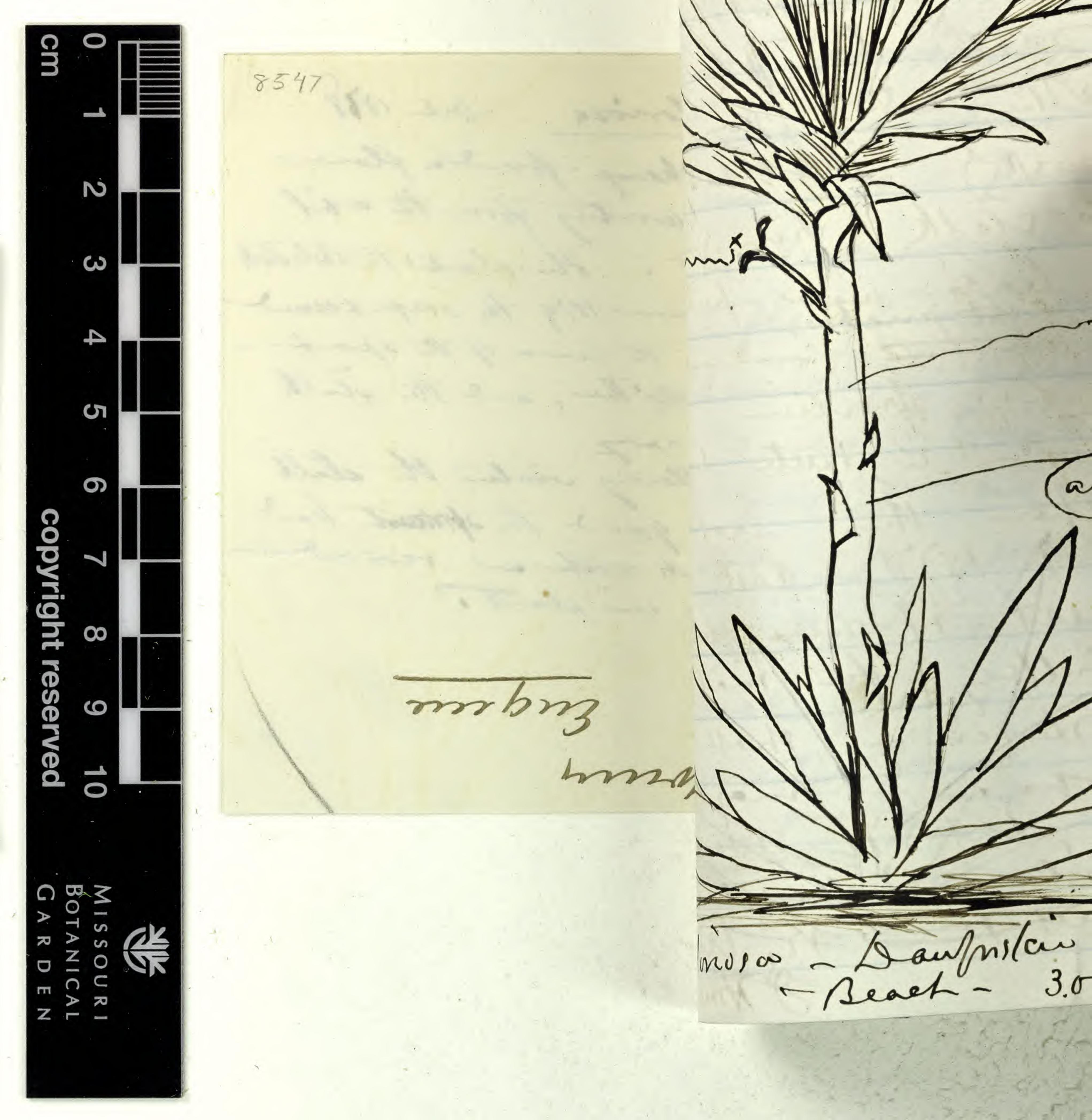


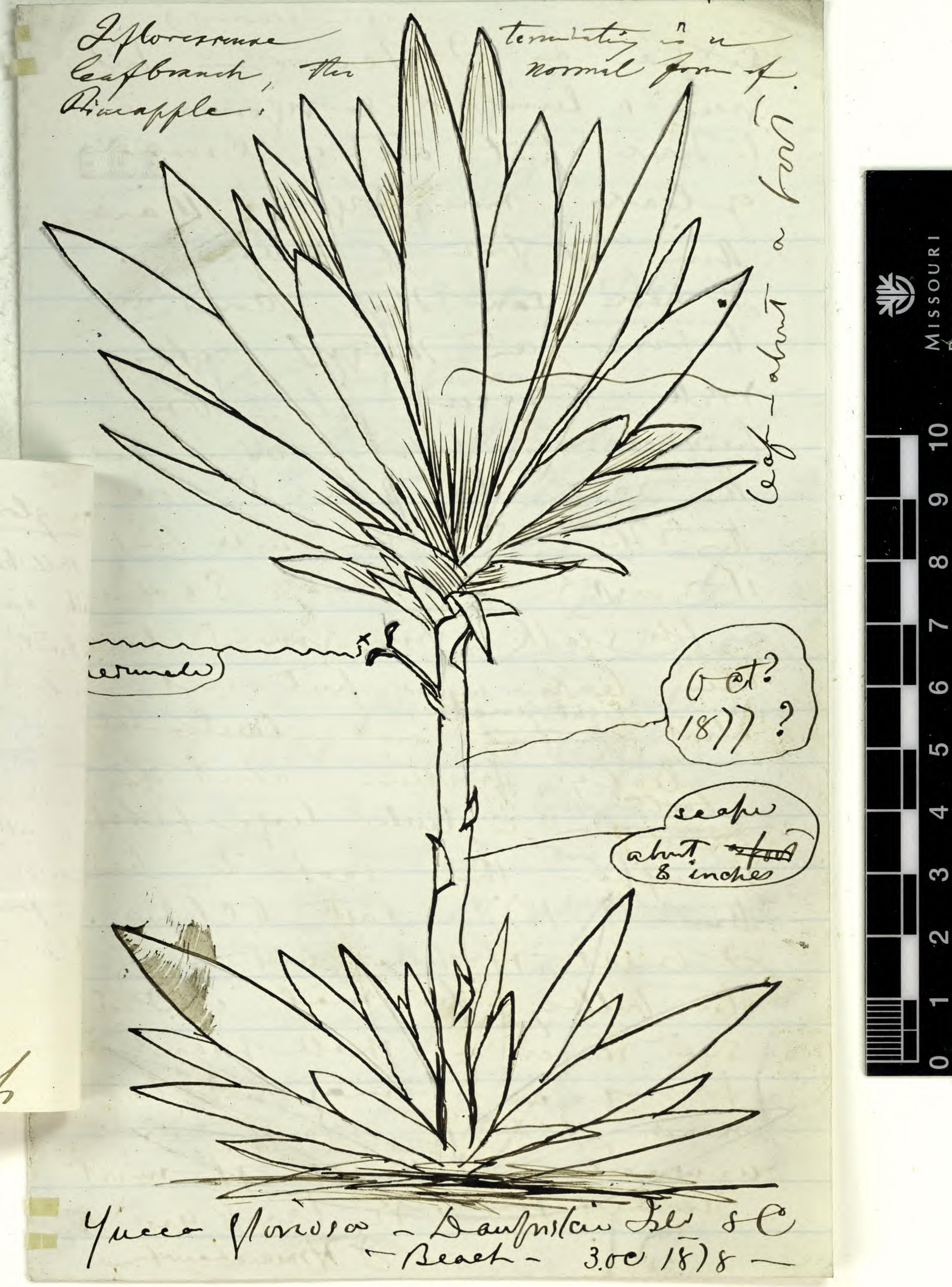


The ca - 1 dec from ago. Flowend at Hort. Bot. Also Oct 9/77 -Il was named grivera" when neit. I I The overy is of the usual pale green I sit the Stigmant filamenents & style an I four white. The overy is narrow as of 18 y compains with J. augustifolia (i.e. the I form grown in Fort Bot. Mo). The Stanner 3 I Just nache to the wife of The the overy is housty prometice the has Howard Linell very sweet. The inner Set of periouth and with the outer three. I have not seen the foliage. 3 & The plant occorring & Mothaw is 4 fl. L. MISSOURI BOTANICAL copyright reserved GARDEN



Jucan gloriosa och 1868 & mills thangs found a flower stalk sproutry from the adil of a brait. He plante the wholestock in Summer 1879 the sirpe deemed to dry and, the leaves of the spront began to the all en thrown away. 2. the following vinles the stalk being on the grown, the spromet had taken fresh voot and revised sucking a new plant,





Sofan an I Tomm I but freen 1 lung 1 sompones as 1. have fut ant a comm of learns mon hours than then at born of stems. I neva law This cont before, and Thurst it Well to Decent it. One hermale mas left to show that The Deaper Las Howard. In the ste jun mus forms 11-mpl skelder. Seaper a fla stalk fra framed to about Eight inches, but out left, Stoot a litte linger petals. Isuppor this sect to be that of 18)) - last 60/20. I buyst if him with me to bulling for mail or Dis sunt il il puhan. It may not has much, but it certains, is unusual & Thurst of myst interest 7 on 1 Kg bruf you Hmuehawh

0 1 2 3 4 5 6 7 8 9 10 MISSOURI BOTANICAL GARDEN

Rai Och 8 ! 5 Bluffin 3. (°C. 18)8 Lyro Engelmann my & En Lovelon s frans Truis jesterdag. duite sent a pareil fooles a sum as Less Com To fix Men ups, and explanating letter at The Jame time. I spent Cait mynt mit Tim Dick at Dan = = fulkui de nam pul back, and as Lawry I found mans sur! Then or Sime they we that time -MISSOURI

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
BOTANICAL GARDEN

Latina report This Dame 1. Had Duartes! Long. they mining I structed on the beach - or what they Call a beach - althouse it is not much of me). [. like ut Junes - mt. the Vague him of Junding fruit of J. Venora. I saw two in bud, one with slem abnt 3 feet hyr of andher me stem at all, or normon than y. filamentosa muel has. n signs y comen of fruit on Man. I then tweed or fait Jeans flring stalks, but at usual. ne traces of any fruit on Hew either. But d' a flower stalle glast Jean which mas not Tal letce the rest, and and they always and

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MISSOURI BOTANICAL GARDEN

Aug 15 1873 Murra Gloridsa Hot. bot. Whington furtifiera A Sohot mis The only leaf seen is sliff, green or soundly peneplibly glaverous beneath, sheep posterly, brown margin, lighter on the very edge i rough or semilate mejelesty) a for sucha above base, but teett ommobling off, - Sach of leaf quite rough upon samily sø i loner half derf 18 italing long 17 bides wride before the un'Nte stame it is widest. above basi only 6 liver will Tif but now thick . MISSOURI BOTANICAL copyright reserved cm GARDEN



Dr. Isaac Ott writes to the Medical Record the following upon Coca and its alkaloid Cocain: After a small dinner, with a cup of coffee, I masticated Coca, swallowing leaves and saliva. First, increased salivation; warmth of buccal mucous membrane, which extended to stomach; the taste of leaves at first rather bitterish, but at length sweetish; numbness of buccal mucous membrane; the heat of the skin seemed increased, and the physical forces seemed greater. In thirty-five minutes a slight disposition to move about. In two hours and a half ten grammes eaten, and some intoxication present; co-ordination somewhat impaired; muscular strength seemed weakened; a sort of paresis; disposition to be left alone; going into reverie, with frontal pain; tinnitus aurium; ears feel as if I had been blowing a wind instrument; pupil slightly dilated. In three hours, somnolency; frontal pain and fulness about ears continues; disposition to close eyelids; general numbness of whole body. In three hours and twenty-five minutes 29 cubic centimetres of water taken; mouth is hot and dry; nervous urine passed. In three hours and forty-five minutes, general numbness; reveries; holding of respiration, as in deep thought. In four hours I have taken 191 grammes of Coca; the remaining were chewed, and the saliva only swallowed; somnolency disappeared; mind bright and clear. In five hours, I have taken 28 grammes; pupil more dilated; slight supper taken, no coffee, but water; the supper seemed to bring down the action of the Coca. In seven hours and forty minutes, the Coca being gradually chewed, frontal headache returns with fulness of ears. In eight hours and forty-five minutes, 60 grammes of Coca have been chewed; loquacity; eyes brilliant and moist; at length speech becomes thick; am in high spirits and full of hopes. In ten hours and fifteen minutes frontal headache again coming on; drowsiness; then retire, but am unable to sleep. After a few hours, deep sleep comes on, but is disturbed and not prolonged. Arise at 7.30 A. M.; pale face; eyes seem dry; lips bluish; take a light breakfeast without coffee. Since 10.30 P. M. last night have had frontal pain; sensation in mouth still blunted. At dinner took three cups of coffee, which relieved me, but headache came on during the afternoon; taste blunted during the whole day.

Coca on man increases the pulse, elevates the temperature, dilates the pupil, and de-

creases the amount of water used and chloride of sodium excreted by the kidneys. Observations made with Cocain on lower animals gave the following results:

In small and large doses it causes loss of co-ordination and decrease of motor power; it does not paralyze the anterior columns of the spinal cord. To retrain a mode and a spinal cord.

In small doses it increases the sensibility, which causes general convulsions upon irritation. Large doses abolish the functions of the posterior columns and sensory nerves.

When gradually introduced in the system, it kills by stoppage of respiration. It reduces the pulse and arterial tension momentarily and afterwards increases them. This effect is a result of an action on the heart and vaso-motor centre. It does not paralyze either the pneumogastrics or the vaso-motor centre situated in the brain.

It first excites and then paralyzes the centres of respiration.

The pupil is dilated, and the temperature after a depression rises.

On striated muscles the course of contraction, as registered by Marey's comparative myo-

colors affect. 4. Used in a large dose it causes delirium, halluciations, and finally concestion

graph, is similar to that with veratria. We all needs to bewend about to sowiel entit

If Coca and Cocain are compared with coffee and caffein in their physiological action, the result will be that they are very similar, and that Coca and its alkaloid should be classed amongst the excitants, of which coffee is the chief example.

From a pamphlet on Coca Leaf, by Manuel A. Fuentes, of Lima, Peru, and translated for the Chemist and Druggist, by P. L. Simmonds, we make the following selections:

The leaves are gathered when they have attained their full development, which is about 4 centimetres in length. They have then acquired a certain degree of consistency, the green color—resembling the emerald—of the upper surface and the pale under side of the leaf are in their full brilliancy. About this time they will almost drop themselves. During the gathering great care must be taken not to injure the young leaf-buds, or they will dry up, and the second crop of leaves be diminished. They ought to be gathered leaf by leaf, holding the bough with the fingers of the left hand, and collecting with those of the right hand. in cases great of debility following trubus fever, scurvy, ansemic con

In taking his Coca the Indian seats himself leisurely, and opening his bag, introduces leaf by leaf into his mouth. He chews it, and with his tongue forms it into a kind of ball, which he lodges in the side of his mouth, like a quid of tobacco. He then moistens with his saliva the end of a small stick, which he introduces into a little calabash containing lime or wood ashes, formed of the burnt stems of the Chenopodium Quinoa, and licks this stick two or three times. They generally take Coca three times during the day; the first time before commencing their work, the second about the middle of their task, and the third some time after completing their labor.

For a long time the reputed virtues of the leaf were scouted as fabulous, but later, the results of experience, the impartiality of the celebrated historians, and the authority of a great number of scientific men corroborated the facts set forth as to the benefit of this

custom of the Indians.



case. The price of coca at La Paz, where the best is procured, was last year sixteen dollars per acket of twenty-five pounds.—Popular Science Review.

M. Colpaert, in a paper on the subject (Bull. Soc. de Accl.), says that often when passing the grand chain of the Andes he has chewed coca to combat the cold, and always with the best effect. The leaves have a bitter taste, but do not burn the tongue, as is alleged. Those who use it continually, and with "llipta," have an insupportable smeil. The first time he tasted it he felt, after a few minutes, slight shiverings of fever; the blood mounted to his head and pressed forcibly on the temples. He felt this for about ten minutes, after which a complete reaction took place, and he experienced from head to foot a pleasant and agreeable heat. Arrived in the morning at his resting-place, he took coca in the shape of tea before going to sleep, only throwing away the first steeping and drinking the second water of infusion. Notwithstanding the snow and the intensity of the cold, he experienced a pleasant heat, perspiring so freely as to wet the mattress.

The Indians attribute to coca many virtues, and employ it in different forms. It is for them an indispensable and favorite sustenance, for the deprivation of every other substance is less

94 grammes of Coon; the remaining were chewed, and th

felt than that of his favorite coca.

Every traveller passing through the country should lay in a stock, for it is the best medium of currency, and that most appreciated among the Indians. Often in the mountains not a thing could be obtained with dollars or coin of any kind, but a handful of coca will act on the Indians like a talisman, and for it he will place his hut and all it contains at your disposal. They also use coca leaves for every external malady, whether it be a cut in the hand, to stop hemorrhage, to heal ulcers and boils, or for neuralgia and headache. In the latter case, a moistened piece of coca is applied to each temple, and whether it be superstition or reality, an immediate relief is said to be obtained. The following narration of the virtues attributed to coca by the Indians was told M. Colpaert by actual witnesses of the proceedings:

In one of his latter journeys to Vilcabamba, one of the richest mineral districts of Peru, he arrived in the town at the moment when they were carrying out of his home one of the miners who for many years had been afflicted with a dreadful malady, which defied all the efforts of medical skill to cure. His body was covered with external ulcers, and the unfortunate had been given over as incurable, and suffering martyrdom, implored to be put to death. An old Indian, who had formerly worked under his orders, demanded permission to untertake his cure, which was granted. The patient was laid on the floor of the room, stripped, and half a dozen Indians commenced chewing coca and llipta, singing and dancing around him with strong cabalistic actions. After about a quarter of an hour, when the leaves had been sufficiently masticated and impregnated with saliva, induced by the abundant foam, they again commenced dancing around and spitting on the body of the unfortunate. This lasted for about half an hour, when each Indian placed his quid of chewed coca on the ulcers of the patient, who was then enveloped in cloths and left to repose. The same scene was renewed every two days, and at the end of the month the patient, who was named Gonzales, was thoroughly cured. This treatment took place in 1850, and he was living eleven years after, when M. Colpaert wrote his narrative.

From experiments, made repeatedly on himself, and on other individuals, Dr. Mantegazza draws the following conclusions:

1. The leaves of the coca, chewed or taken in a weak infusion, have a stimulating effect upon the nerves of the stomach, and thereby facilitate digestion very much. 2. In a large dose coca increases the animal heat and augments the frequency of the pulse, and consequently of respiration. 3. In a medium dose, three to four drachms, it excites the nervous system in such a manner, that the movements of the muscles are made with greater ease—then it produces a calming effect. 4. Used in a large dose it causes delirium, halluciations, and finally concestion of the brain.

The most prominent property of coca, which is hardly to be found in any other remedy. consists in the exalting effect it produces, calling out the power of the organism without leaving afterwards any sign of debility. The coca is in this respect one of the most powerful nervines and analeptics. These experiments, as well as the circumstance that the natives have used the coca, from the earliest period as a remedy in dyspepsia, flatulency and colic, have induced Dr. Mantegazza, and several of his colleagues in South America and Europe, to employ the leaves of the coca in a variety of cases, partly as masticatory, partly in powder, as infusion, as alcoholicoaqueous extract in the dose of ten to fifteen grains in pills, and as a clyster. Dr. Mantegazza has used coca with most excellent results in dyspepsia, gastralgia, and entralgia; he employed it not less frequently in cases great of debility following typhus fever, scurvy, anæmic conditions. etc., and in hysteria and hypochondriasis, even if the latter had increased to weariness of life. The coca might also be employed with great benefit in mental diseases where some physicians prescribe opium. Of its sedative effect in spinal irritation, idiopathic convulsions, nervous erethism, the author has fully convinced himself. He proposes its use in the highest dose in cases of hydrophobia and tetanus. It is a popular opinion that coca is a reliable aphrodisiac; the author has, however, observed only two cases in which a decided influence upon the sexual system was perceived.

Dr. Mantegazza, finally, recommends this remarkable plant, which could be easily introduced into trade, to the profession for further physiological and therapeutical experiments, and adds the full history of eighteen cases by which the medicinal virtues of the remedy are proved to satisfaction.—London Pharm. Journal, from Oesterreichische Zeitschrift für praktische Heil-

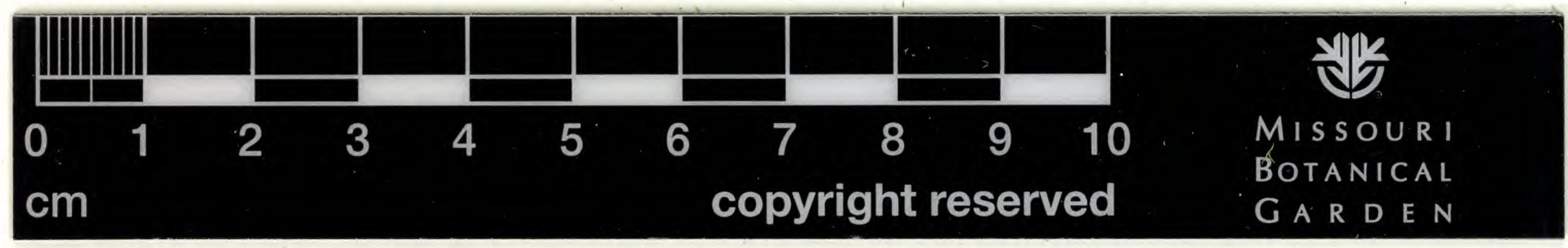
kunde.

GEORGE ENGELMANN FAFERS

CHERON OF THE LEGISLES.

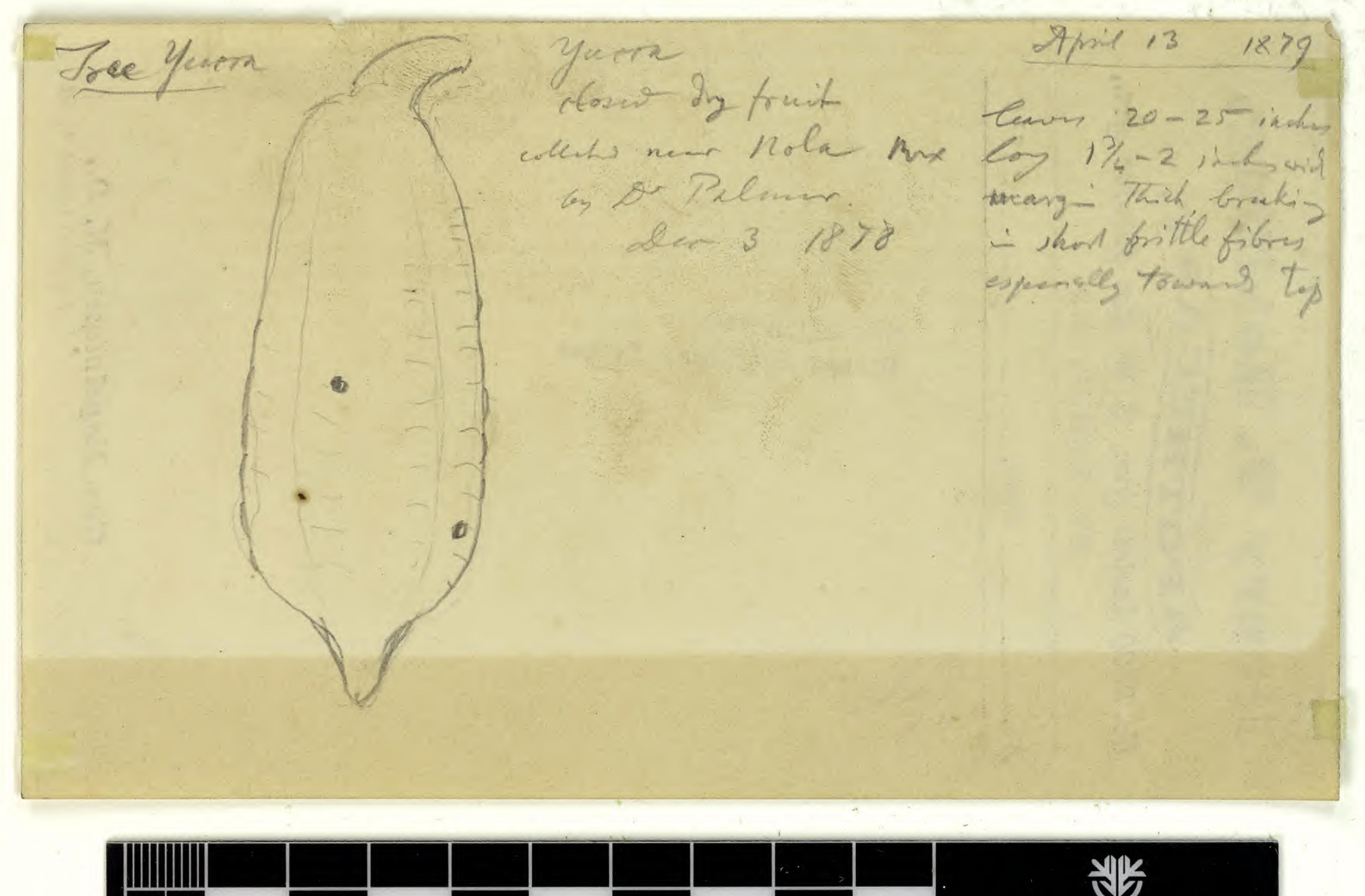


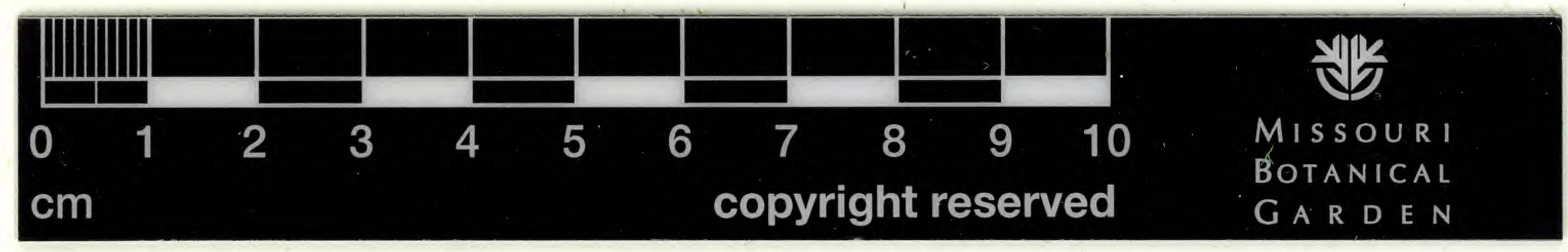
developed a recurred position, the axis meanwhile elongating and in vigorous Trees not ravely forming a second hier of aments sevent inches above the first ones, beaf bundles. The bruits Chapters, only brust bearing That is observed to the amounts such as are find so often in pines bearing lateral cours fing Disept P. pungers, P. rigion and many other; Carpellary scales brond, rounded, more or less abruptly outpildate, their braits half their leagth, transverse, retuse. Comes pedurled, occurred, oval to cylindrical - conscal, 3 to 6 p, usually 4 to I inches long, 1/4 to 2/4 inches ai d'ameter (when closed) of a rich brown colour and almost glossy, souler larger 2 inches line and I lives wide Stracts thickened, return or comarginate papophyses marked with grooves, radiating from the slightly prominent umbo, transversely divided by a sharp nige armed with a short stout prickle. Jeeds triangular 2/2 to 3/2 lines long, Dark rough on the under side, wing



mank 1880 Juren Loca Trust deaden, simple on rarely with a few short branches in the top, deary "large" as pausicle enest, also in fruiting; fruit pully seed that In San Levis / Stories varen the Cast , seed the land Jenoa from De Palmer, Sendenis Thuck simple on ravely Highly branched, 20-30 feet high leaves 10 inches long of the wive, with few but very that, cented fibrey on the edges al artt a deeply channeled Ferminal spine. Yurra & Palmer on the Licera Mola, between Landwis and the coast " a lange bree", lange leave, 2 2/4 feet long, full 2 inher with with slightly filamentous many; presty and

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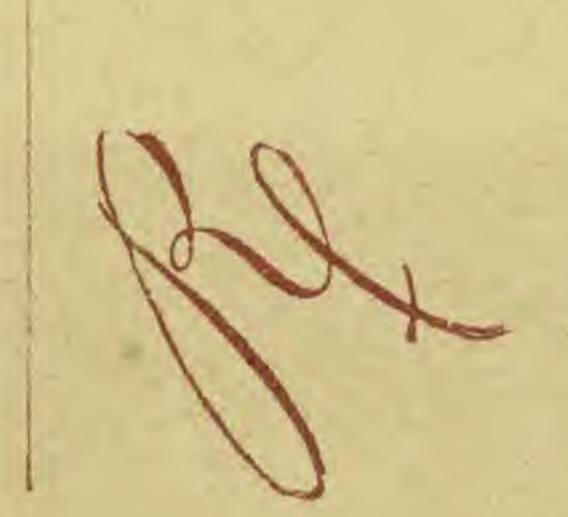




Geo. Engelmann, M. D.,



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DE Palmen writer i The Juren of the Tierra Mola, Muy 100 is lage, tru like, brunched, truck sward inches through, leaves Lonly ald ones? I hanging down



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